

AMENDMENT

IN THE CLAIMS:

Please amend the claims as follows:

1. (Canceled)

2. (Currently amended) The substrate processing apparatus according to claim 8, claim 10, wherein

the object is at least a part of a processing vessel in which a substrate received therein is processed.

3. (Original) The substrate processing apparatus according to claim 2, wherein
the substrate is processed in the processing vessel with the use of a plasma.

4. (Original) The substrate processing apparatus according to claim 3, further comprising a heater that heats the object, at least when no plasma is generated.

5. (Original) The substrate processing apparatus according to claim 2, further comprising a heating furnace that receives the processing vessel, wherein

the mist passage is formed as a space defined between the processing vessel and the furnace.

6-9. (Canceled)

10. (Currently amended) A substrate processing apparatus for processing a substrate for manufacturing a semiconductor device, comprising an object to be cooled, the apparatus further comprising:

a mist generator that generates a mist;

a carrier-gas supply source that supplies a carrier gas for carrying the mist generated in the mist generator;

a mist passage through which the mist carried by the carrier gas flows to cool the object; and

a gas-liquid separator that separates the mist circulated in the mist passage from the carrier gas, and collects the separated mist as a liquid,

wherein

the gas-liquid separator has a plurality of fins to form a meandering passage, and

the mist generator generates the mist from the liquid collected by the separator.